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ABSTRACT

An organization that has led the way in opening new frontiers in using advanced technology to create innovative commercials is Charlex, a New York-based company in business since 1977. Charlex has produced music videos, and also commercials for Diet Pepsi, Cherry Coke, Crest Toothpaste, and White Mountain Cooler. It has used a wide range of techniques: models, paintbox painting, stock footage, live people, clay animation, computer generated images, and clip art. Its blend of people, photographs, models, lighting, and creativity has given the company an edge in its market; and it has shown others several approaches to creative use of the new electronic equipment. With the need to stay fresh and ahead of the competition, the company has been drawing on the services of a number of painters in the New York City area as well as its own staff, and it has been developing demonstration reels to suggest different approaches to clients. The company has demonstrated that technology and creative imagination are not mutually exclusive and that editing within a frame can produce stimulating images. (MG)

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PANEL: "Television and the Computer Graphics Revolution"

PAPER

Computer Generated Graphics in Television Advertising

by

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Computer Generated Graphics in Television Advertising

Post production once meant editing one shot of video to another, or perhaps inserting an effect such as a dissolve or wipe. Although motion picture post production had progressed much further, video post production was hampered by a technology that imposed a rigid set of limitations upon creative people.

With the beginning of the 1980s, LSI chip technology had firmly established the microcomputer as the technology of choice in many offices and classrooms, and the microchip was changing the way television post production took place. The microchip led to the creation of digital video effects (DVE) units that allowed operators to manipulate pictures in all three dimensions so that pictures could be squeezed, turned, zoomed, and distorted in any desired way by a technician. Other effects relying on the microchip included posterization, frame storage, and combination of multiple imaging on one frame.

Add the electronic paint capability that a number of manufacturers now offer, and technicians could further manipulate

pictures by changing colors, adding shadows, cutting out an image to be moved elsewhere in the frame, and painting all new images on video. Of course the hole left by moving part of the picture had to be filled with something else.

Creativity has played just as important a role in changing the quality of visuals as the improvement in technology. As people have become skilled with the new machines, they have been able to create pictures once possible only in fantasy.

Early electronic painting and post production was done in an environment where experience and an aesthetic judgment had to be developed. The early work was criticized as lacking the aesthetic qualities expected in other media (including canvas and motion pictures). The product could be described as mechanical and too formal. Yet, those efforts opened the door to others who would come during a second phase of creative production.

The second phase of electronic manipulation of images began in 1983-1984 with the introduction of elaborate three-dimensional works including The Cars video, "You Might Think" and the "Opening" to Saturday Night Live. The people doing the work on these productions had diverse backgrounds including air brush competencies they had been developed in art schools. Commercials, music video production, and other works were designed with conscious awareness of aesthetic rules including concerns for balance, unity, depth, and color.

An organization that has led the way in opening new frontiers was Charlex, a New York City based company. Murray (1986) writing about "The Charlex Way" observed, "[it] has

produced memorable video images: live action combined with graphics that have stretched the definition of animation." Back Stage (1986), discussed new technologies in video production and picked out "the Charlex look" as an example of how "intricate, wildly busy production motifs" could be created for video. Adweek (1984) carried a storyboard for a Charlex advertisement while White (1984) wrote about the "witty blend of live action and computer-assisted graphics."

Carter (1986) writing in Channels treated the history of Charlex and discussed some of its more important productions. The article quoted Charlie Ryant, co-creative director of MCA Advertising: "They have really opened up the possibilities in advertising. It's all in the way they use people in these fantastic animated backgrounds."

Even the popular press including Barol (1985), writing in Newsweek noted that Charlex owners, "preside over the hottest video-production house in the business." Perhaps a bit ironic, but Lavine (1986) wrote a very complementary article for the Johns Hopkins Magazine, the university which both Charlex owners attended, but from which neither graduated.

Charlex--The Background

Alex Weil and Charlie Levi began their work in video in 1977 as a sideline business to keep their rock band "The Last Men" going. They started by making animated sketches of storyboards, animatics, for advertising agencies to give clients an idea how the finished commercials might look. While the rock band hadn't been doing too well, the video production work grew.

The two men had backgrounds that enhanced each other's skills. Levi came from a tradition that involved business--his parents owned a store, so Levi became the manager of the rock band. Weil, on the other hand, grew up with his mother's wealth and traveled in Europe where luxury was common and where he became comfortable with the arts; he became the base player in the band. Levi could negotiate the contracts for Charlex, while Weil set the artistic tone.

Charlex broke out of the animatics work into full television production when it produced a television campaign for the National Enquirer (1981). Although the campaign was crude by later standards, it gave the company an identity. Compton, the advertising agency, approved the campaign because it was impressed with Weil's and Levi's animatics so it directed that the animatics be sharpened up and used as the actual campaign.

By 1984, Charlex was winning awards with The Cars' video, "You Might Think" which appeared on MTV. The same year Charlex produced the opening to Saturday Night Live giving the company exposure.

The year 1984 saw post production techniques grow from the mechanical qualities of earlier work to fully produced three-dimensional products that demonstrated just how much art and technology could assist each other--phase II in electronic post production.

You Might Think

"You Might Think" (1984) opens with with a young woman sitting in a room containing window, bed, and table in front of black background. The elements in the room and parts from a car including gears and doors, start floating upwards at slightly varying speeds. Ultimately, the objects come to a stop, change directions, and fall into what first appears to be a can, but turns out to be an open head.

As the video develops, unexpected visual events are constantly appearing to match the sound track. For example, the woman seen throughout the video opens a tube of lipstick only to see Rocker Ocasek, leader of The Cars, come twisting out.

The detail in that video became the hallmark of early Charlex production. The shadow under Rocker Ocasek's foot as he walks across the table to enter a picture is precisely drawn on the dresser top.

Charlex used a variety of techniques to achieve its early "look" including matting or layering of a number of images together; combining real people, objects, and models; using stock motion picture footage and still photographs; creating electronic images to complement other images; and adding clever lighting. The following clip from "You Might Think" video demonstrates the early Charlex style.

"You Might Think" (1984)

Matting

Layering images (matting) and using mixed images (people and electronic graphics for example) is a process that Levi and Weil have called, "cultural cut and paste." Starting with the background each picture level is laid onto the video one level at a time until the foreground is finally added.

Using present technology a background can be built and recorded digitally on the Abekas or Harry, then a second level of action can be composed and combined with the first and so on until the completed video is finished without any loss of picture quality.

In early work before the availability of digital equipment Charlex had to use analog signals recorded on separate tapes and combine the individual tapes until the complete video was assembled--a process used on the opening to "Saturday Night Live" (1984). Although the resulting composite image was clear, it did not match the quality of the more recent digitally recorded layers. In the countdown to be shown, each second is marked by another layer of images appearing on the screen. Each layer had to be built up by itself; and once a new layer was added to the tape, it and all of the preceding layers could be changed only by starting again.

Charlex Leader

You may have noticed that Weil and Levi included the shadows on lower picture levels that would have been cast by objects above if they were real. The shadows were placed on the image to match their sources by offsetting the mat and softening the image of the objects casting the shadow. Artists had to work out the precise location, frame by frame, of the shadows to insure a believable picture.

Layers are not always added to show depth, but may, as in the opening for "Saturday Night Live" (1984), be used to insert motion when an actor turns on a drawing of a television set in the Cherry Coke (1986) commercial and a movie appeared.

Painting on Television: What You See Is Not What Was There

Image manipulation is another characteristic of the Charlex process. The Quantel Paintbox, the Harry, the ADO, and the Kaleidoscope serve Charlex's needs in these areas. The Paintbox can be used to remove people or objects from a frame, paint elements on the picture, change the location of objects, change perspective, and retouch images. The Paintbox can be used like an airbrush to create anything the artist envisions. The Harry allows a sequence of frames to be modified. The Kaleidoscope and ADO allows for sizing of pictures, rack focusing, and adding shadows.

The Paintbox was used in the Cherry Coke commercial to "air brush" an image of a cherry on the screen. Although a model was shot first to help the artist, the image seen in the commercial was the result of extensive electronic painting. The final picture suggests a three dimensional cherry with glare from a key

light falling on high points and reflections of a backlight appearing along one edge of the cherry. An artist working with a Paintbox shaded and colored each element to create an sense that appeared consistent with reality. As the commercial progresses, the cherry moves up and off the screen as the words Cherry Coca-Cola rotate around the cherry, further reinforcing the curve of the fruit.

Using Models and People

Artists further used the capabilities of the Paintbox in the Cherry Coke commercial to seat people in model cars at a drive-in movie. One couple flies off screen in a Pontiac that appears to work like a rocket. The model cars were shot one-car-at-a-time on video; the people in the cars were real actors who were sized to fit into the cars. When the spot is shown, you will notice the people move. The car that rises like a rocket from the parking lot was made to turn slowly 90 degrees and take off into space.

The artist used the Paintbox to mask, or remove, the lower part of the actors' bodies so they could be matched to the space above the model cars' seats. Since the actors--only two people were used dressed differently for each car--and models were turned, it was essential that both actors and model cars turn at precisely the same speed on the screen. The ADO was used to reduce the size of the actors to the scale of the cars.

When the car backed and turned before it lifted off, the driver of the car turned his head in appropriate directions to

match the actions of a driver in a real situation--he looked backward as the car moved backward, and forward when the car moved forward. The detail in the sequence is especially impressive when one notes the reflections of the movie on the cars' surfaces. About 500 separate elements were shot or painted and composited together to make the final commercial.

The process of building the spot required that each element in each frame be manipulated individually throughout the scene--a process that required editing of each field, not just each frame. In a 30 second spot this amounts to 1800 separate picture edits.

In addition to the cars and the actors in the moving car shot, a rocket plume shot out of the bottom of the car to propel it up; later a second plume from the rear of the car sent it off into space. The artist added using the Paintbox. Although the Paintbox can be used to move the car and its plume off through space, the perspective of the three objects (car, people, and plume) had to be planned carefully.

Cherry Coke (1986)

Photographs and Drawings

Charlex staff drew and created the buildings in the background of the Cherry Coke commercial on the Paintbox. Sometimes artists simply took white paper and cut out windows and shapes to resemble the geometry of a building. The paper placed in front a blue background served as a shape that could be moved,

manipulated, turned, and painted to take on any characteristic demanded by the setting in which it appeared. Other background materials included stock motion picture footage and photos, and live footage shot in Charlex's own studio--a room with a blue curtain hanging at the back. Some clients have wanted outside pictures--film or tape produced under the guidance of Charlex so that the company could add specialized effects later.

Lighting

Lighting has been important to the effects Charlex has developed. In the Cherry Coke commercial already shown, there is a shot of a woman dancing to the left of a juke box. Although she danced alone in a studio, she had to be lighted in a way that suggested that the lighting was coming from the juke box. In the shot a strong side light with an orange cast came from behind her left side (screen right). The only other light provided enough fill to soften shadows.

Another, perhaps more difficult, situation arose in the White Mountain Cooler "Getting to the Bottom of It" advertisement. In that commercial a man appears to drop through a number of complex situations into a canoe which he rides over a water fall. As he goes over the falls, the canoe turns from a horizontal line to a vertical line. The turning is done electronically, but it was essential to light the actor with two key lights, one to represent the time before the turn; another to light him after the turn. I will show the commercial, but the detail is quite fine and a bit difficult to see.

White Mountain Cooler Spot

Titling

Sometimes all that is necessary to create an effect is to manipulate titling. In the Diet Pepsi commercial Charlex caused words to turn on their side and sink, become a speeding car racing off the frame, and float away on a wave. All of the effects were created with the aid of a Paintbox and a digital video effects unit to turn, break up, and distort the image. Using the Paintbox added the wheels and the waves that covered the Titanic titling.

Diet Pepsi Commercial

Name the Flavor

One of the commercials that demonstrates a more recent "typical" Charlex image, an image that has been developing in recent months, is the "Name the Flavor Contest" (1987) done for Procter and Gamble to introduce it's new Crest for kids, a toothpaste with a unique flavor. The commercial was a first for Charlex in the use of computer generated imagery (CGI). The commercial also used a variety of talent drawn from Charlex and other companies.

The star of the commercial is a computer generated image of a band of gel toothpaste. Procter and Gamble was concerned that

elaborate graphics and images not detract from the central "star" of the commercial, the gel, so the gel runs throughout the commercial. Since Charlex does not produce computer generated imagery, it turned to Pacific Data Images in San Francisco to create the gel utilizing their Ridge 325 computers. The production team at PDI was headed by Carl Rosendahl. Roger Gould, technical director at Pacific Data Images was also involved.

Charlex, under the direction of Alex Weil, shot live action in front of a chroma key blue screen for combining with the rest of the elements later. The eskimo twins were one girl who performed twice. "Zippy the Chimp", the monkey on the David Letterman Show, also appeared in the commercial as did "Ponga the White Gorilla" made over into King Kong by John Semerad on the Harry where the gorilla was also given teeth tinted pink and retroscoped frame by frame in order to be placed over a new background. Other elements included stock footage of Ponga the White Gorilla.

The commercial included stop motion toothbrushes. Rather than shoot the toothbrushes and their mouths together, the mouths were shot frame by frame and then imposed on the 3-d toothbrushes. The work was done at the Peter Wallach Studios in New York. The emcee was an articulated model whose hands could be removed and moved from position to position. The walrus was a clay animation done by a Boston Company, Olive Jar Animation. The fruit were puppets supplied by Sal Denaro in New York.

The gel toothpaste that streams through the commercial was

to be the star and therefore was expected to have a personality. Early in the commercial, the gel forms into a star and the points "boogie and shimmy". The pattern for the star's movement was derived from Steve Martin's actions in "The Jerk." Guidance came from Charlex throughout the process by providing animatics of the gel and of other parts of the spot so that size, position, and timing of all parts would match when brought together in the final composite.

Name the Flavor (1987)

The Crest Commercial demonstrated how a number of elements from both electronic and other media could be brought together in a unified whole at an artist's Paintbox.

The Twilight Zone: A Different Style

A style of creative work done by Charlex that is designed to show that the company can go in quite a different direction appears in the opening it did for the home video library of The Twilight Zone. The sequence used footage from the original episodes of the program. The Paintbox artist arranged a variety of images into a final product that was twisted, faded out, moved, or resized without tinkering with other elements in the opening. The effect fits the unreality of the series. Here is the opening.

The Twilight Zone (1988)

Working is Groups of Frames

In some commercials, Charlex artists have worked in groups of three frames. The first frame of three is modified to create the effect desired (color, change in contrast, etc.) and then a dissolve is done from frame one of the sequence to frame one of the next sequence. The resulting motion is smooth and slightly unreal. The Crunch Tators (1988) commercial used the technique.

The Crunch Tators, a Lay's brand product, commercial blended live action, cartooning, and painting over actors to create the visual effects. In the opening sequence a woman takes a bite of Crunch Tators, and visual imagery creates an impression of the feeling she has from eating the snack. The sequence starts in front of a white background. The motion, rather than being continuous, is a series of dissolves between shots of every third frame of action creating a slightly jerky motion smoothed over by dissolves. The background assumes a series of bright colors (blue, red, orange, yellow, etc.) that are accented by white highlights drawn around the woman and painted through the background so that it is more than just a uniform color. Sometimes the highlights on the background change to blue and other colors to complement the background color. The highlights move around the woman as she runs in the frame. Brought in behind the woman is an image of a rock band as she dances to the beat.

The scene is cut apart like puzzle pieces to reveal a bag of Crunch Tators while the chips are seasoned, then they come out of

the bag and a hand picks up one to eat. The theme of excitement over the flavor of the chips is repeated with a man dancing--highlighted over a dark background that emerges into rows of Crunch Tators symbols.

One scene shows a man's head surrounded with hand painted lines creating a clown costume-like image around the head made up mainly of blue with white and pink lines on diagonals to create a sense of visual action demanding attention. The lines swirl on three frame dissolves, as has been used throughout the commercial, to create a greater sense of action and excitement.

Later in the commercial the feeling of excitement is created with a bag of Crunch Tators taking off from a rocket launch pad in the early morning hours, complete with spot lights reminiscent of Cape Kennedy.

The commerical contains live models, black and white stock footage, hand painted lines and masses, enhanced backgrounds, dissolves, cut apart scenes, cut out figures, and cartoon images of the product bag and seasoning shaker. The effect is one of a continuously changing background and foreground so that movement from one part of the commercial to another is created by changing the background first or both together.

The commercial uses color, line, scrap elements, hand drawn images on video to create an emotion about the product that the advertiser wants communicated to the audience. The commercial's intent is to focus the viewer's emotions on the notion that eating Crunch Tators is exciting and to drive the message home repeatedly throughout the commercial. Non-emotional elements (line, mass, color, movement, pictures of people and objects) are

combined to stimulate emotional responses. The message is feel something and want to buy, not buy because of logical reasons presented. If the commercial stimulates a feeling in the viewer, the combining of physical elements has become greater than the sum of the parts.

An Interview

I had the opportunity to talk with Charlie Levi (1988) co-owner of Charlex, for about an hour, and to ask him the directions his firm is taking. The company has made its reputation by creating innovative visuals combining live action, the video counterpart to clip art, electronic images produced on a Paintbox, and other elements to make a creative commercial. I asked Charlie Levi to talk about the elements his company brings together:

> Most of the elements in our work, both foreground and background, are drawn from scrap material. The Quantel Paintbox is the great assimilator as well as the ultimate retouch tool. In addition, it is a tool with which you can create original drawings or the equivalent of drawings. If you were drawing a city, for instance, you may prefer not to start with an empty screen. You may want to start with twenty different pictures of New York, twenty pictures of Chicago, and twenty pictures of Los Angeles. You take all these city scapes and recombine, retouch, relight, retexturize, then it becomes an original drawing; however you don't have to start from scratch.
>
> The creative use of scrap is stimulating. The Paintbox can really assimilate any images that have ever been made. By working with existing elements, one doesn't have to reinvent the wheel.
>
> In some of our work, we refer to the images we assimilate. Mona Lisa breaks out laughing. We go through casting to match mouths, we find some with a mouth like Mona Lisa, we shoot her mouth, we put makeup on her. It's a big process. We match her exactly to the picture, just in that small area.

Some of the other elements Charlex has matched with live people include Thomas Jefferson's eyes and the Statue of Liberty's nose. The key elements used by Charlex making a good match are casting, makeup, and lighting. The result is painted in on the Paintbox:

> Obviously it's a retouch, montage medium. And the skills come from the imagination and selection involved with the material and the way that you link them together or play against the ways that they don't link together. If you want the Statue of Liberty to appear to be lit by Mars and Mars is on the right, you have to find a shot of the statue that is lit from there. You decide to do things that work in the physical world even though the shot doesn't exist in the physical world. It obeys the laws of the physical universe. Lighting, shading, the shadows that things cast on each other, the reflections that things cast, the feeling of the ambient light related to different objects in similar ways, are all very important in helping the viewer accept the image.
>
> When you first look at an image you, of course, don't notice these details. It either works or it doesn't work. I'm describing the difference you can't put your finger on. It's the way things sit together. They don't look just stuck on there. Hopefully in our better work it doesn't, and it's because we've blended in with those kind of concerns.
>
> Perspective for instance, I can't take a shot of you from above and put you in front of a shot of the Statue of Liberty taken from below unless I want that weird, improbable effect. Of course, this is only if you're trying to create a normal world. It's those kinds of skills, the patience, and the desire to get it correct that makes the montage work. It's very easy to combine two shots and get the whole thing wrong.

I asked Levi if the starting point was to make the images look like the natural world.

> If that's the job. If the job is to make it look like we woke up one morning and Mars was there instead of the moon, and you looked out of your window in Battery Park and saw that--if that's the job--then you have to put Mars where the moon was. And you can't have the Statue of Liberty being lit by a blue light because Mars is red, and unlike the Moon would cast a red glow on the Statue of Liberty. So, to make the scene work, you must re-tint the blue moonlight so it becomes Mars' red light.

> Whatever the logic is, you have to follow it if you want people to feel it. If on the other hand you want to wake up in a bizarre world and shadows fall on the same side as the light, and people have two eyes on each side of their head like flounder, you then follow a different set of rules. You can change the rules, but whatever the rules are, you can't expect the viewer to follow different rules than you're following.

Levi summarized the concepts he utilizes.

> There is no one set of rules. It is necessary to have a clear understanding of what you're trying to achieve and use the Paintbox to get there. If you were trying to create a cubist effect, all the things I've said about lighting wouldn't be as pertinent because normal lighting is not central to the idea of cubism.
>
> However, to the gist of reality lighting happens to be a pivotal thing that ties in what you see in the perceptual world and so does texture and shading and perspective. You can't take a shot of someone with a wide angle lens and another person with a telephoto lens, and still another person with a normal lens and put them in the same room.
>
> I can't cheat. If I try really hard to get something that looks realistic, and someone says, "it reminds me of Picasso," I've failed, not succeeded. I'm giving exaggerated examples. . . .
>
> I guess the point of this is the agility of the machine to combine elements is insufficient to create a good work. The goals and aims to be realized through people's artistic skills as well as sometimes logical skills, makes the machine work. The machine is an extremely powerful and impressive device however you could very quickly with no effort create lots of junk, too.

In working with clients, Charlex is asked to produce spots from scratch--execute their creativity to the fullest, and they are asked to follow existing storyboards. The company also reacts to a storyboard from the perspective of how readily it can be executed. An example was the Crest contest commercial.

Levi noted, however, that the company does have an unusual amount of creative say for two reasons:

> We've created a creative position for ourselves in the world. People view us in a certain way and typically we

attract jobs that fit in with people's image of us. People don't come to us to shoot a woman in the kitchen. Also, because we are on the leading edge technologically, it is sometimes a prerequisite for our clients to trust what we tell them about the use of the equipment. There's the technological veil that gives us a certain control of the job. Again, the fact that we don't abuse that control is what allows us to remain in business. We help make things good. But the fact of the matter is that we are the experts at using our technology to communicate our client's ideas. It is not just that we have the equipment, our clients will continue to defer to our technical and creative expertise as long as we continue to help them.

At present Charlex has about 60 employees most of whom have both artistic and equipment skills. Many were trained in art schools and then learned how to use Harrys, and ADOs while working part or full time for Charlex.

Current Demands

Charlex, of course, is not the only company working with the new post production technology, and today it is confronted with the need to stay fresh and ahead of the competition. This is beginning to lead the company in new directions. For example, the commercials done for Amtrack (1988) do not appear at all like the Charlex products of only a year earlier. The equipment has been used to combine elements in a natural look. Here is an example of two of the commercials.

Amtrack (1988)

To keep its approach new, the company has been drawing on the services of a number of painters in the New York City area as well as its own staff, and it has been developing demonstration reels to suggest different approaches to clients. Where all this

will lead is yet to be seen.

Tour of Charlex

The following slides were taken on a tour of Charlex's facilities, and show some of the quality and quantity of equipment they have. The slides show the Ampex tape recorder racks, a room equipped with a Paintbox, and a room for shooting animation. Charlex occupies two floors just off Fifth Avenue on 45 Street in Manhattan. The last slide was taken along the street in front of their building.

Conclusion

Charlex is but one company using advanced technology to create innovative commercials. It has used a wide range of techniques: models, Paintbox painting, stock footage, live people, clay animation, computer generated images, and clip art. Its blend of people, photographs, models, lighting, and creativity has given the company an edge in its market; and it has shown others several approaches to creative use of the new electronic equipment. The work has helped a company started by two people on very little investment grow to an organization with $10 million in sales each year, a high status address in New York, and $7 million in equipment.

But more importantly, the company has demonstrated that technology and creative imagination are not mutally exclusive and that editing within a frame can produce stimulating images.

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